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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,364	04/20/2005	Yoshinori Nishiwaki	2002JP314D	1514

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AZ ELECTRONIC MATERIALS USA CORP.
ATTENTION: INDUSTRIAL PROPERTY DEPT.
70 MEISTER AVENUE
SOMERVILLE, NJ 08876

EXAMINER

HAMILTON, CYNTHIA

ART UNIT	PAPER NUMBER
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1752

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above; the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/532,364

Applicant(s)

NISHIWAKI ET AL.

Examiner

Cynthia Hamilton

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/31/06, 10/27/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 6-12 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

4,6
1. Claims 1-2 and ~~4-6~~₁ and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sander et al (us4247611). Sander et al teach the instant invention of applicants' claims 1-2 and 4-6 and 8 with the exception of using a mixture of novolac resin with other alkali-soluble resins as binders to the compositions. With respect to instant claims 1-2 and ~~4-6~~₁^{4,6}, Sander does equate alkali-soluble resins of copolymerized methyl methacrylate and methacrylic acid as a binders other than novolaks useful in the compositions of Sander et al. "It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, ...[T]he idea of combining them flows logically from their having been individually taught in the prior art". In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Thus, the use of two binders mixed together taught by Sander et al to have the same purpose as the novolac resin and the alkali-soluble resins of copolymerized methyl methacrylate and methacrylic acid in their compositions with photoacid generating systems and polyacetals to form the radiation sensitive copying composition of Sander et al would have been prima facie obvious combined use of two resins for the same purpose. IN Sander et al, see particularly example 3 with the electrodeposition of nickel layers with respect to instant claim 8. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 UAPQ2d 1934 (Fed. Cir. 1990). See particularly MPEP 2144.05.

4,6
2. Claims 1-2 and ~~4-6~~₁ AND 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buhr et al (4,311,782). Buhr et al teach the instant invention of applicants' claims 1-2 and ~~4-6~~₁^{4,6} and 8 with the exception of using a mixture of novolac resin with other alkali-soluble resins

Art Unit: 1752

9+ 11/22/07
as binders to the compositions. See particularly ^{4,6}Example 23 and col. 6. With respect to instant claims 1-2 and ~~4-6~~¹ and 8, Buhr et al does equate alkali-soluble resins of copolymerized methyl methacrylate and methacrylic acid as a binders other than novolaks useful in the compositions of Buhr et al. "It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, ... [T]he idea of combining them flows logically from their having been individually taught in the prior art". In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Thus, the use of two binders mixed together taught by Buhr et al to have the same purpose as the novolak resin and the alkali-soluble resins of copolymerized methyl methacrylate and methacrylic acid in their compositions with photoacid generating systems and polyacetals to form the radiation sensitive copying composition of Buhr et al would have been prima facie obvious combined use of two resins for the same purpose. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 UAPQ2d 1934 (Fed. Cir. 1990). See particularly MPEP 2144.05.

3. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buhr et al (4,311,782) as applied to claim 1 above, and further in view of Omote et al (5,858,518). Buhr et al in col. 8-9 teach the use of their compositions on metal plates and for forming by electroplating printing circuit boards in col. 16. Such a use of positive photoresists is taught by Omote et al teach using conventional photoresists to be used over polyimide insulation layers in column 10 lines 17-46 to act as plating resists for plating up electrolytic nickel and electrolytic gold layers for a terminal pad. Thus, with respect to instant claims 7-10, the use of any positive

Art Unit: 1752

photoresist known to be useful as a plating resist such as that of Buhr et al as the plating resist in the method of Omote et al in col 10 would have been prima facie obvious as the use of a conventional material to do the step it was designed to do as taught by the prior art.

94 1/22/07 { 4. Claims 1-2 and ~~5-6~~⁶ AND 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roth (4,737,426). Roth teach the instant invention of applicants' claims 1-2 and ~~5-6~~⁶ AND 8 with the exception of using a mixture of novolac resin with other alkali-soluble resins as binders to the compositions. See particularly abstract, col. 5-6, and col. 7-8. With respect to instant claims 1-2 and ~~5-6~~⁶ AND 8, Roth does equate alkali-soluble resins of copolymerized methyl methacrylate and methacrylic acid as a binders other than novolaks useful in the compositions of Roth. "It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, ...[T]he idea of combining them flows logically from their having been individually taught in the prior art". In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Thus, the use of two binders mixed together taught by Roth to have the same purpose as the novolak resin and the alkali-soluble resins of copolymerized esters of acrylic acid or methacrylic acid with ethylenically unsaturated acids such as methacrylic acid or acrylic acid their compositions with photoacid generating systems and polyacetals to form the radiation sensitive copying composition of Roth would have been prima facie obvious combined use of two resins for the same purpose. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 UAPQ2d 1934 (Fed. Cir. 1990). See particularly MPEP 2144.05.

Art Unit: 1752

94 1/22/07 5. Claims 1-2 and ~~5-6~~⁶ AND 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruckert et al (4,789,619). Ruckert et al teach the instant invention of applicants' claims 1-2 and ~~5-6~~⁶ AND 8 with the exception of using a mixture of novolac resin with other alkali-soluble resins as binders to the compositions. See particularly abstract, Summary of the Invention, col. 9-10 and Example 5 especially copper plating. With respect to instant claims 1-2 and ~~5-6~~⁶ AND 8, Ruckert et al does equate alkali-soluble resins of copolymerized methyl methacrylate and methacrylic acid as a binders other than novolaks useful in the compositions of Ruckert et al. "It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, ...[T]he idea of combining them flows logically from their having been individually taught in the prior art". In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Thus, the use of two binders mixed together taught by Ruckert et al to have the same purpose as the novolak resin and the alkali-soluble resins of copolymerized esters of acrylic acid or methacrylic acid with ethylenically unsaturated acids such as methacrylic acid or acrylic acid their compositions with photoacid generating systems and polyacetals to form the radiation sensitive copying composition of Ruckert et al would have been prima facie obvious combined use of two resins for the same purpose. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 UAPQ2d 1934 (Fed. Cir. 1990). See particularly MPEP 2144.05.

6. Applicant's arguments filed 27 October 2007 have been fully considered but they are not persuasive. Applicants argue that the lack of sag shown in comparison with a mixture of one particular polyacrylic resin and a novolak resin at one specific thickness and one specific mix

ratio is sufficient to remove the obviousness of mixing any alkali soluble novolak and any alkali soluble acrylic derived polymer as taught by the prior art. The examiner holds the showing of one ratio and one specific acrylic resin not showing sag with respect to one novolak resin showing sag is insufficient to take from the prior art the entire range claimed by applicants in the amended claims. Thus, the showing made while showing an unobvious advantage for the specific ratio and acrylate resin given with respect to sag is accepted as such by this examiner, the range of showing is not sufficient to support the entire range claimed with respect to unexpected properties. The rejections stand.

7. The examiner notes for the record that the processes of claims 8-12 require (1) imaging of the positive resin composition and (2) forming a plating layer. There is no other connection of these two steps.

8. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37


Art Unit: 1752

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Hamilton whose telephone number is 571-272-1331. The examiner can normally be reached on Monday through Friday 9:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571) 272-0729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



**CYNTHIA HAMILTON
PRIMARY EXAMINER**

Cynthia Hamilton
Primary Examiner
Art Unit 1752

January 22, 2007